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A Golden Decade

Exploring Internationalization in Nordic Communication Research[1]

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Abstract

The five countries of the Nordic region have a common cultural and historical background. In the field of communication, they share institutions, conferences, publications and networks. In order to reveal how this shared tradition is manifested in scientific communication, the present text analyses the evolution of publication patterns of Nordic communication scholars by applying bibliometric techniques to over five hundred articles published in international scientific journals from 2001 to 2010. Different parameters were analysed: institution and country of origin, number of authors, typology of collaborations, topics studied and the level of specialization.

During the decade under study, the presence of Nordic scholars in international journals doubled, manifesting the growing internationalization of Nordic communication research. Co-authorship patterns predominantly involve collaboration with Anglo-Saxon scholars, particularly North American. A high level of specialization was found in areas such as technologies and new media, which was reflected in the journals chosen as vehicles for publication.

Keywords: authorship, bibliometrics, communication research, Nordic countries, scientific journals, scientific production.

Introduction

The five countries of the Nordic region have a common cultural and historical background. In the field of communication, they share key scientific instruments such as institutions, conferences, publications and networks. There are organizations like Migra-Nord, the Nordic Research Network for Media, Migration and Society. Probably the most well-known of these institutions is Nordicom, a Nordic knowledge center – a collaboration between Denmark, Finland, Iceland, Norway and Sweden – in the field of media and communication which supplies research findings and statistics to a variety of user-groups in the Nordic region but also beyond that area. Nordicom's website illustrates the shared tradition with its archive of media conferences with a Nordic scope. The key event is the Nordic Conference on Mass Communication Research, now called NordMedia. This conference has been held every second year since 1973, organized by the media and communication research associations of the Nordic countries in cooperation with Nordicom. This institution is mainly known by its publications efforts. It publishes book series, mainly research anthologies in English, as well as the Nordic

Media Trends. There are also journals with a Nordic scope, like Nordicom Review, also published by the same institution, and Northern Lights.

Although Nordic communication research is integrated into the global scholarly flow of communication and media studies, Rantanen (2000: 40) points out that "there is also considerable exchange of ideas inside Nordic media and communication studies through shared language, culture and traditions that has lasted much longer than Anglo-American influence". On the contrary, Horsti (2008: 276) considers that "researchers seem to tend more towards British and American research traditions than towards their Nordic colleagues with regard to referencing and inspiration", at least in the subfield of immigration and ethnic relations. With regard to the subfield of media power research, this opinion is shared by Slaatta (2008), who stated that diversity rather than unity has characterized this area in the Nordic countries.

Few comparative studies have been carried out among the Nordic countries, which are usually seen as a quite homogeneous reality from the outside. This paucity is surprising given that, with the exception of the Finnish language, there are no language barriers. One explanation could be the national nature of research funding (Horsti 2008). Among the studies with a Nordic scope in the field of communication, one of the first examples is that of Müller et al. (1993) on the liberalization of telecommunications in the Nordic countries (excluding Iceland). Prehn and Jauert (1996) also applied a comparative framework to study local broadcasting in Denmark, Sweden and Norway. Other areas seem to favour international studies, like that of political communication, as shown by the works of Nord (2008) and Strömbäck et al. (2008). To these examples can also be added those of the book series with a Scandinavian perspective published by Nordicom.

In the European context, Masip (2005) offers data from 1994 to 2004 that demonstrate the relevance of Nordic countries among the European contributions to international communication journals: Sweden had the fourth largest number of papers published, followed by Finland, with Denmark and Norway sharing the ninth position. These four countries accounted for 11.83% of the articles published by European scholars. Moreover, five Nordic institutions were among the 37 organizations that published more than ten papers in top journals during the period: the University of Helsinki (18), the University of Oslo (14), Tampere University (11), Linköping University (10) and the University of Jyväskylä (10).

Given these precedents, the objective of the present paper is twofold: first, to determine whether this common tradition can be seen as a unitary research area at the international level, that is, how Nordic research impacts beyond its natural boundaries; and second, to reveal how this shared tradition is manifested in the output of research. In this sense, there are two initial research questions:

(RQ1): What is the share of communication research published by Nordic authors in the main international journals?

Although scientific research is published and disseminated in very different ways and publications, journals were selected for two reasons: first, the availability of data thanks to the Web of Science (WoS), the most widely used bibliographic database for bibliometric studies; second, journals are published regularly and allow a constant flow of data over a long period of time. This is not the case for other publications like books or conference proceedings. Moreover, Ingwersen (2000) demonstrated through an analysis

of different social sciences fields that the WoS is a valid tool for bibliometric studies of research published by Nordic and other smaller countries, despite its Anglo-Saxon bias.

International journals in the field of communication were defined as those indexed by the WoS. This comprises those publications included in the 'Communication' category of the Social Sciences Citation Index (SSCI) and those in the 'Film, Radio, Television' category of the Arts & Humanities Citation Index (AHCI).

(RQ2): What are the collaboration patterns of Nordic authors in international journals?

This question tries to establish the level of collaboration among Nordic authors in order to measure its importance in the total output of multi-authored articles. This is an important topic in bibliometric research, as several studies confirm that multiple authorship tends to increase the impact of the research (Franceschet and Constantini 2010, Persson et al. 2004, The Royal Society 2011). A study using data from 1993 showed increasing collaboration in Nordic authorship in different fields, although the data varied greatly across fields (Persson et al. 1997). A more recent study also indicates an increase in collaboration among Norwegian scholars during the past decade (Smeby and Trondal 2005).

Beyond authorship, I also wanted to determine what kind of output was produced, hence two additional research questions were included:

(RQ3): What are the main topics discussed by Nordic researchers at the international level?
(RQ4): What are the main journals in which this output is published?

The answer to both questions reveals the subfields of communication in which Nordic research is more competitive at the international level or, at least, those areas in which Nordic researchers are more internationalized.

The relevance of the work presented here is that, to date, there are no studies addressing the issues proposed. As I do not wish to offer only a static image of the state of Nordic communication research, data are provided for a whole decade, from 2001 to 2010. The longitudinal nature of the study allows me to illustrate the evolution of the different parameters analysed and, thus, to offer a more comprehensive explanation of the trends detected.

Method

This study takes a quantitative approach to the object of study through the use of bibliometric techniques. Data for the study were retrieved from the Web of Science on 25 October 2012. First, I selected the advanced search option. Then, different criteria to select data were applied: the country of origin of the authors was Denmark, Finland, Iceland, Norway or Sweden; the publication year was the period 2001-2010; and the types of documents retrieved were articles. First, this search was limited to the SSCI database. Results were then filtered by category under the label 'Communication'. Finally, the 504 results obtained were exported as an Excel spreadsheet. One of these records was deleted. The reason was that it was incorrectly assigned, as its author did not belong to any Nordic institution. After this search, I applied a second one using the same three criteria for country of origin, publication year and type of document. However, the search was limited to the AHCI database and results were filtered by category

under the label 'Film, Radio, Television'. The 38 records obtained were also exported. The two spreadsheets, one for the SSCI and the other for the AHCI, were merged into a final file. Thirteen of these records were repeated because they belonged to journals simultaneously indexed in the SSCI and the AHCI. These were those published in Continuum-Journal of Media & Cultural Studies (1 paper), Journal of African Media Studies (4 papers), Media Psychology (4 papers) and Television & New Media (4 papers). After deleting these duplicated entries, the final database contained 528 articles.

In order to answer the research questions, different parameters were analysed for the final set of articles: institution and country of origin, number of authors, typology of collaborations, topics studied and level of specialization. Authorship of the sample was quantified and classified according to the number of authors and its aggregation by institution and country. A typology of collaborations was applied to the sample: among members of the same institution, among colleagues from the same country, and international collaboration. The most productive countries and institutions were ranked. The main collaboration networks and the distribution of institutions and countries according to journals were also drawn using social network analysis (SNA) with Ucinet 6.445 (Borgatti et al. 2002) and NetDraw 2.123 software (Borgatti 2002). The main topics addressed by Nordic researchers were also established through tag clouds and frequency tables for keywords – both author- and source-supplied – and titles of articles, excluding numbers and common English-language words like articles and prepositions. The application used was Wordle, which required some de-duplication work on entries because of its processing of lower and upper case letters. Finally, the level of specialization was delimited through the distribution of articles in general and specialized journals. Given its longitudinal nature, the evolution of every parameter was studied over the period of study.

Results

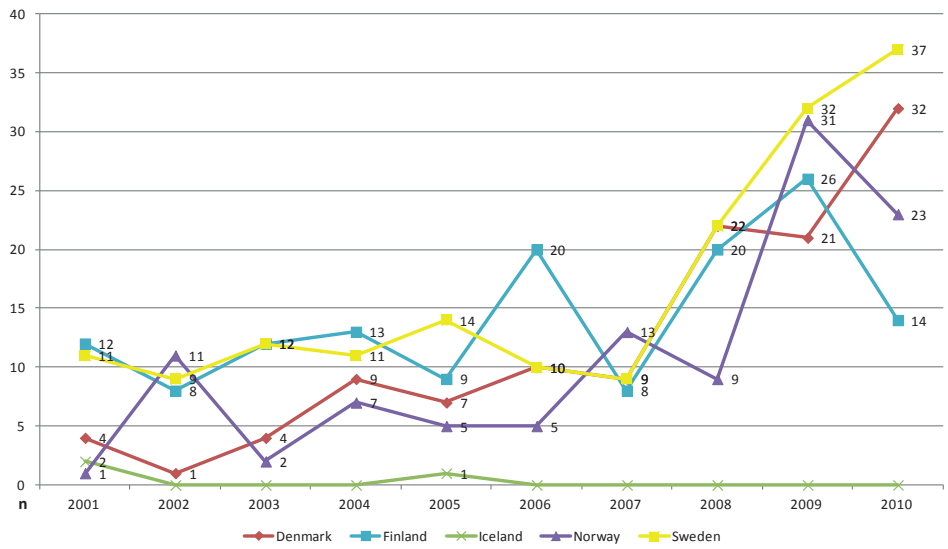
The results of the analysis are presented in four categories, corresponding to each of the research questions.

Countries and Institutions

As stated, the total number of articles published during the period analysed was 528, but this figure was unequally distributed. The most productive country was Sweden, whose researchers published 167 papers, followed by Finland (142), Denmark (119), Norway (107) and Iceland (3). The distribution of the articles over the decade of the study was also unequal, concentrating in the last years of the series (Figure 1).

Growth trends are clear for all countries except Iceland, due to the low number of articles published by its researchers. However, it is difficult to affirm that there is a consolidated leading country: in the ten years analysed, Sweden and Finland have been leading the table for three years, Norway for two and the other two years this position has been shared, between Sweden and Finland in 2003 and between Sweden and Denmark in 2008. Differences are small, as illustrated by the changes in 2007. In that year, Norwegian scholars published more articles than their Finnish colleagues, who the previous year had published four times more papers.

Figure 1. *Number of Articles Published 2001-2010*



Note: N=528

Beyond the distribution among countries, Table 1 shows the distribution of articles across institutions. There are 21 universities that published more than one paper per year: 8 are based in Sweden, 6 in Denmark, 4 in Finland and 3 in Norway. However, this distribution also illustrates different national trends: while Finnish articles come mainly from universities of large publication output – its 4 institutions are among the 8 most productive – Swedish publications come from a larger number of institutions and output is not as dense – its first institution ranks number 7. Most of this production is concentrated in the SSCI. Papers published in the AHCI are only relevant for a few institutions like the University of Copenhagen, where articles published in the AHCI represent 35.5% of its total output, Stockholm University (25%), Roskilde University (18.2%) and Aalto University (15%).

Between 2001 and 2010, articles from Nordic authors in international journals grew by 243.3%, whereas the total number of papers in the SSCI and the AHCI increased by 64.6%. This growth in percentage terms explains why Nordic research was 1.6% of the total articles published in 2001 but represented 3.4% of that production ten years later (Figure 2). It has to be highlighted that this growth is especially intense from 2008 onwards.

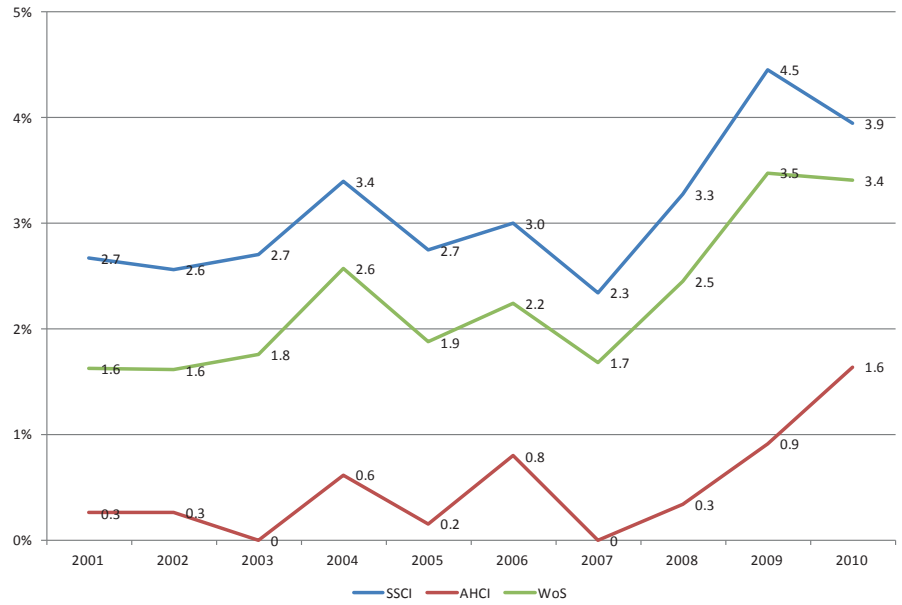
The distribution of these publications in the SSCI and the AHCI databases clearly illustrates that Nordic research is more visible in the social sciences than in the arts and humanities. During the period, the share of Nordic researchers in the SSCI is above the mean for WoS, whereas the AHCI data are clearly below, even with no publications in 2003 and 2007. Only in 2010 was the growth of papers in AHCI-indexed journals able to absorb nearly all the decrease of articles in SSCI-indexed journals. Despite the differences in percentages, the trend is very similar in SSCI-indexed journals and in AHCI-indexed journals. This confirms the robustness of this growth in international visibility.

Table 1. *Number of Articles Published by Institution 2001-2010* [2]

	Institution	SSCI	AHCI	WoS
1	University of Helsinki	43	1	44
2	University of Oslo	41	1	42
3	University of Copenhagen	20	11	31
4	University of Tampere	29	1	30
5	University of Jyväskylä	28	–	28
6	Aarhus University	21	1	22
7	University of Gothenburg	20	1	21
8	Aalto University	17	3	20
9	University of Southern Denmark	18	–	18
10	Linköping University	17	–	17
11	Mid-Sweden University	16	–	16
12	Örebro University	16	–	16
13	Lund University	14	2	16
14	Copenhagen Business School	13	–	13
15	Norwegian University of Science & Technology	13	–	13
16	University of Bergen	12	1	13
17	Stockholm University	9	3	12
18	Jönköping University	11	–	11
19	Roskilde University	9	2	11
20	Aalborg University	10	–	10
21	Chalmers University of Technology	10	–	10

Note: N=528

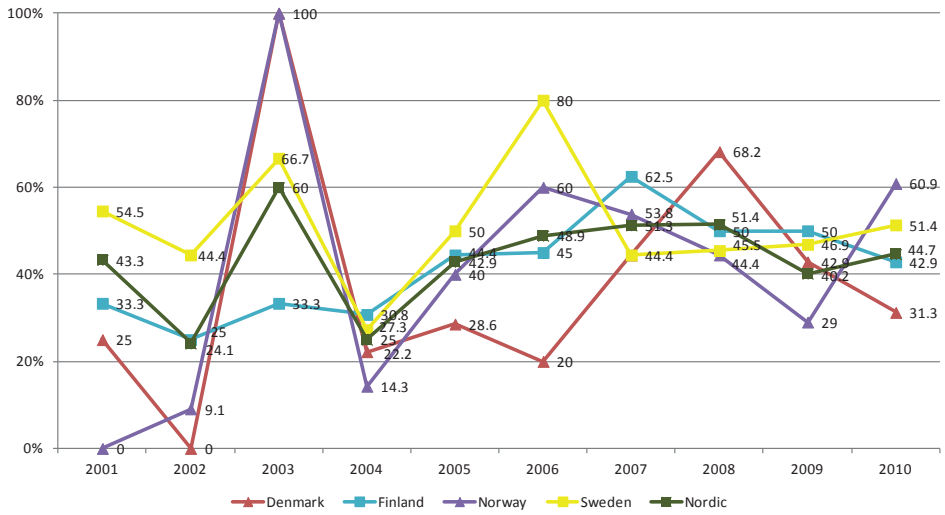
Figure 2. *Share of Nordic Research Articles in International Communication Journals 2001-2010*



Collaboration

An initial analysis of authorship distinguished between single and multiple authorship for each paper. In the sample analysed, single authorship was the most usual form, with a mean of 56.4% of papers retrieved having a sole author during the decade studied. The figure is very similar for 2001 and 2010, although there are great differences depending on the year (Figure 3). For example, 2003, 2007 and 2008 have more multiple than single authorship papers, peaking in 2003 at 60%. In contrast, the previous year has the lowest level of multiple authorship (24.1%).

Figure 3. *Multiple Authorship of Nordic Research Articles in International Communication Journals 2001-2010 (%)*



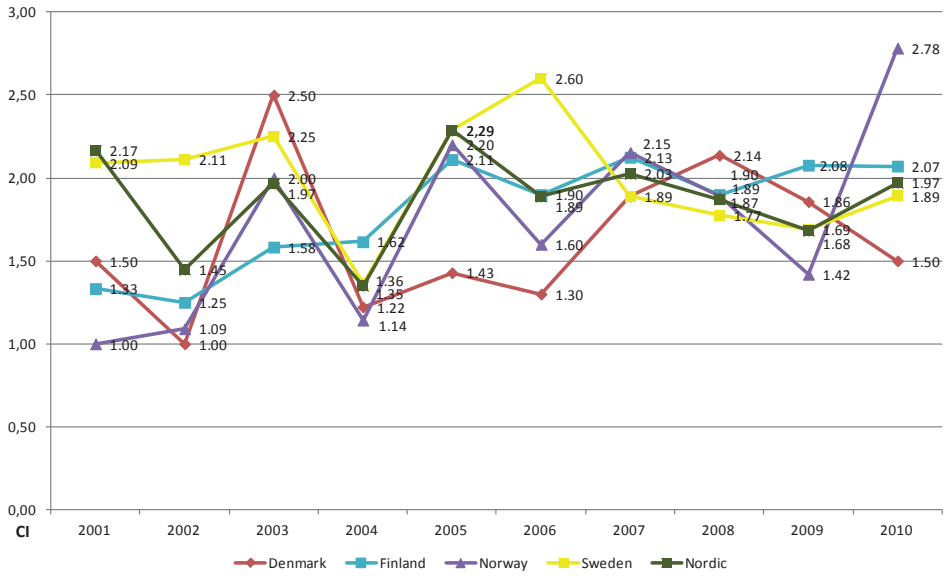
Note: N=230

In the first half of the decade the data vary greatly. This is due to the limited number of articles published, which means each text has more weight in the final result. For example, in 2003 all papers from Denmark and Norway are co-authored, but this figure comes from a total of four and two articles published, respectively. Once the number of articles published grows, from 2008 onwards, the variations decrease and figures tend to the mean. In 2009 and 2010, the years with the highest number of articles published, the interval of multiple authorship between the four main Nordic countries is less than 30 points.

Another way to measure the authorship patterns of Nordic authors is through the co-authorship index (CI). This figure indicates the mean number of authors per paper (Figure 4). For the whole of the Nordic countries, the value of this figure is 1.85, with Sweden above the average (1.94), while Finland (1.84), Norway (1.84) and Denmark (1.70) are slightly below. The case of Iceland is exceptional. Its co-authorship index scores an impressive 10.0, but this figure is based on only three articles with massive participation, among them one Icelandic scholar. In order to avoid a bias in the figure for the years with articles from Iceland, this country was removed from Figure 4. With the exception of Norway, the figure indicates a trend similar to that of multiple author-

ship, with less variation from 2008 onwards due to the increase in texts, which reduces the effect of a single text with a high number of authors. The case of Norway for 2010 suggests a very exceptional year in terms of co-authorship, as its figure for that year is twice that of the previous year. It is also the highest figure for any country – with the exception of Iceland – for the whole series.

Figure 4. *Co-authorship index of Nordic Research Articles in International Communication Journals 2001-2010*



Note: N=230

When applying SNA to institutional collaboration – a different concept than that of multiple authorship, which includes collaborations between different institutions but also between colleagues from the same centre – quite a compact network emerges (Figure 5). Although some networks are isolated from the main network, a core set of institutions can be observed. The centrality of the different institutions was measured according to their degree (the number of links with other institutions). The Nordic institutions with the highest degree were the University of Helsinki (20), followed by the University of Bergen (18), the Norwegian University of Science & Technology, Aarhus University (13), the University of Jyväskylä (12), the University of Oslo (11), the Copenhagen School of Economics & Business Administration (10), the Swedish Royal Institute of Technology, the University of Southern Denmark (9), the University of Tromsø, the University of Gothenburg, the University of Copenhagen (8), Umea University and Lund University (7). This means that these institutions are the most linked to other institutions.

The number of Nordic centres that collaborate with foreign institutions varies greatly among the countries analysed, from 28 in Sweden to 24 in Finland, 15 in Norway, 14 in Denmark and just one in Iceland. These collaborations are basically directed towards the United States, the country of origin of the vast majority of authors in communication sciences. Thirty-one different institutions from that country can be found in the analysis, including the University of Texas, which scores a degree of 10, only exceeded by

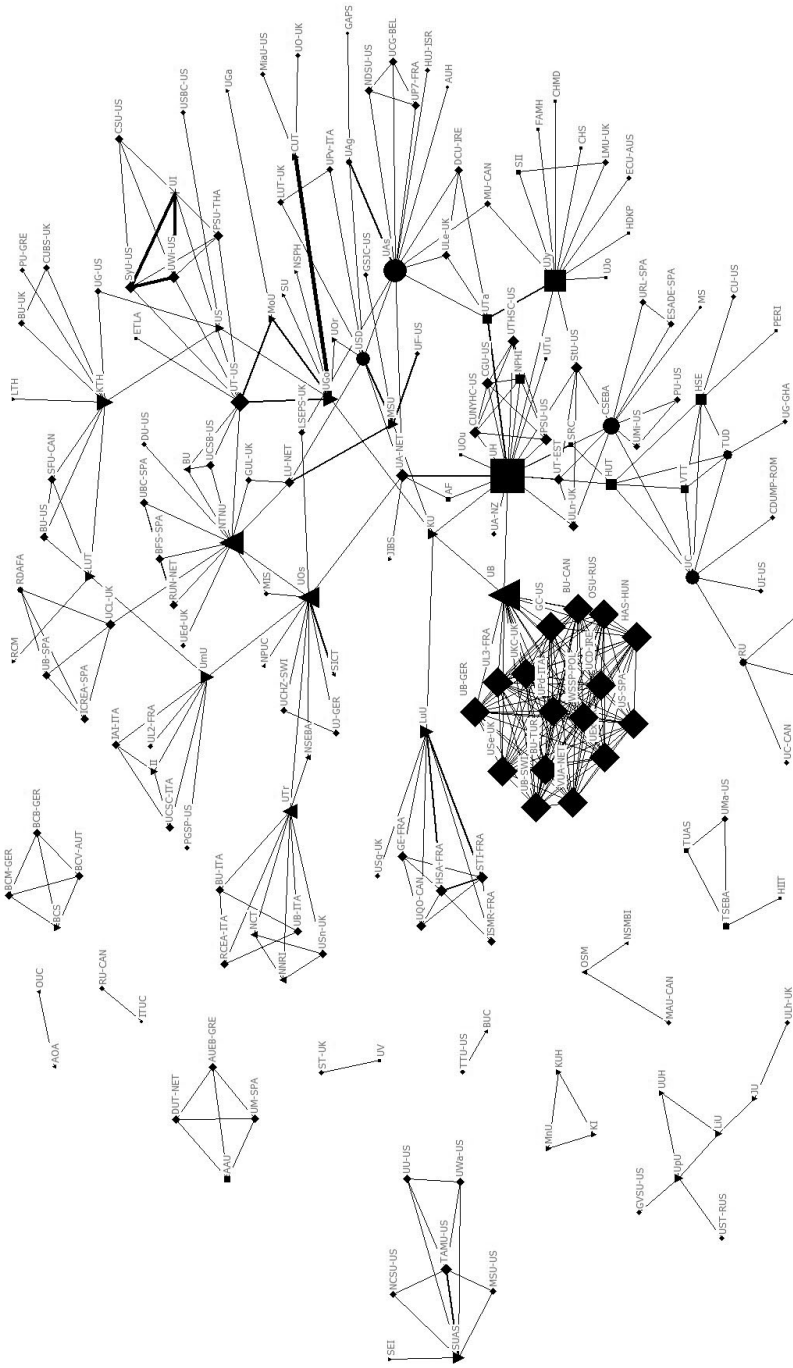


Figure 5. *Institutional Collaboration Network of Nordic Authors 2001-2010*

Note: Size of the nodes varies according to the degree of the institutions. Country codes: Denmark (circle), Finland (square), Iceland (plus), Norway (up triangle), Sweden (down triangle) and others (diamond). Institution abbreviations can be found in Appendix I.

six Nordic institutions. The second country in number of collaborations is the United Kingdom (18 institutions), followed by Spain, Italy (8), Canada, France (7) and the Netherlands (5). As a whole, the 109 institutions that collaborated with Nordic centres came from 24 countries: 17 from Europe, two from North America, Oceania and Asia, and one from Africa. No collaborations were found with other American countries.

A special kind of collaboration was the inter-Nordic one, that entered into between authors from different Nordic countries. Only 9 articles provided this kind of collaboration –including three texts where non-Nordic institutions also took part– with participation of scholars from Denmark (7 articles), Sweden (5), Finland (4) and Norway (3). This represents 1.7% of the total output.

Topics

In order to determine the main topics studied by Nordic researchers in their international publications during the ten years analysed, I established the frequency of appearance of the different words in the titles of the articles and in the keywords supplied by the authors and, in some cases, by the journals. The results can be seen in the form of a tag cloud in Figures 6 and 7.

Figure 6. *Tag Cloud of Word Frequency in Titles*

More specifically, Table 2 indicates the frequency of appearance of the first 20 terms in each case. Eleven terms are common to both titles and keywords and thus can be considered as central for Nordic researchers. These include some expected broad terms for the entire field (media, communication and analysis), adjectives related to different areas studied (public for public relations or public service broadcasting, political for political communication or political discourse or social for social media and social networks), specific media (mobile, television and Internet) and specific objects of study (news and discourse).

Figure 7. *Tag Cloud of Word Frequency in Keywords*

Table 2. *Frequency of Word Appearance in Title and Keywords*

Title			Keywords	
Word	**Frequency**		**Word**	**Frequency**
media	76	1	media	99
public	57	2	communication	77
study	34	3	news	61
news	30	4	analysis	49
communication	28	5	social	48
case	24	6	public	46
mobile	23	7	discourse	45
social	22	8	conversation	40
Swedish	22	9	Internet	36
analysis	20	10	mobile	35
political	20	11	journalism	30
virtual	20	12	political	29
advertising	19	13	television	27
relations	18	14	technology	25
television	18	15	information	24
effects	17	16	theory	24
Finnish	17	17	identity	21
Internet	17	18	power	20
discourse	14	19	democracy	18
use	14	20	interaction	18

A specific search was also done for geographical terms related to the Nordic area, looking for the name of the five Nordic countries and the name given to the people of those countries (table 3). Local names like those of cities (Stockholm, for instance, appears once in the title of a paper) or regions were excluded. As a result, in both the titles and

the keywords, Sweden and Swedish are the terms that appear more frequently, followed by Finland and Finnish. This result does not seem strange, as it correlates positively with the number of papers published by authors from those countries. However, there is a small order change in the following countries, Norway and Denmark, although the differences in geographical terms are minimal. The term Nordic appears just twice in the titles and once in the keywords.

Table 3. *Frequency of Nordic Geographical Word Appearance in Title and Keywords*

Title			Keywords	
Word	**Frequency**		**Word**	**Frequency**
Sweden + Swedish	33	1	Sweden + Swedish	18
Finland + Finnish	29	2	Finland + Finnish	6
Denmark + Danish	14	3	Norway + Norwegian	6
Norway + Norwegian	14	4	Denmark + Danish	5
Nordic	2	5	Nordic	1
Sweden-Danish	1	6		

Specialization

Research carried out by Nordic authors was published in 74 different journals. Although the distribution varied by country, the number of different journals in which authors from each country published was quite similar: 46 for Finland, 45 for Sweden, 43 for Norway and 42 for Denmark, while the only Icelandic author found published her three articles in three different journals.

Only 17 of these journals published ten or more articles during the decade (Table 4); that means at least one article per year. Only one of these journals, Kosmorama, belongs to the AHCI, while the rest are included in the SSCI. In other journals, a sustained trend during a decade of less than one Nordic paper per year illustrates that they are not reference journals for Nordic authors. This trend is consistent with Bradford's law, so it can be said that these 17 publications are the core journals for Nordic communication researchers.

New Media & Society is the journal where Nordic authors published more frequently during the decade studied, with 29 articles. Other specialized journals like Cyberpsychology & Behavior and Javnost-The Public follow the leader, both with 26 papers. The European Journal of Communication is the first generalist journal that appears on the list, with 25 articles published.

In this sense, some journals clearly attracted researchers from specific countries (or at least, researchers able to pass the peer review process of that journal). For example, 19 of the 26 papers published by Cyberpsychology & Behavior by Nordic authors came from Sweden. In the International Journal of Mobile Communications, 70% of the Nordic papers were from Finland. Even more evident is the case of Kosmorama, where 13 of the 14 articles came from authors based in Denmark.

When several journals from the same subfield are chosen and their data aggregated, it is possible to discern specialization for each country. For example, data from the two journals – one of them changed its name in 2008 – specialized in political communication show that the research from Sweden is more internationalized, whereas Finnish and Norwegian research in this area is not as relevant (table 5).

Table 4. *Journals Publishing More than One Article per Year from Nordic Authors*

Journal	Denmark	Finland	Norway	Sweden	Total
New Media & Society	4	8	8	9	29
Cyberpsychology & Behavior	4	2	2	19	26
Javnost-The Public	3	11	9	5	26
European Journal of Communication	3	10	6	7	25
Discourse Studies	7	7	3	7	24
Media, Culture & Society	6	5	8	7	24
Telecommunications Policy	4	8	5	3	20
Public Understanding of Science	11	2	2	3	18
Research on Language and Social Interaction	3	9	–	7	18
Text & Talk	4	6	1	7	18
Journalism Studies	2	4	1	9	16
Public Relations Review	3	1	6	6	16
Discourse & Society	4	6	–	5	15
Kosmorama	13	–	1	–	14
Information, Communication & Society	–	4	4	5	12
International Journal of Mobile Communications	1	7	1	1	10
Journal of Advertising Research	2	2	1	5	10

Note: the total number of articles does not coincide with the individual number of each country for those journals were inter-Nordic collaboration was found.

Table 5. *Number of Articles Published in Journals Specialized in Political Communication*

Journal	Denmark	Finland	Norway	Sweden	Total
Harvard International Journal of Press-Politics	1	1	1	3	6
International Journal of Press-Politics	2	–	1	3	6
Political Communication	3	–	–	2	5
TOTAL	6	1	2	8	17

Discussion and Conclusions

The results of the present study indicate that communication research carried out by Nordic scholars is becoming increasingly international, and the past decade can be considered a golden one. Not only has the number of papers published grown, but the share of Nordic publications in journals has doubled, growing much faster than other countries. In the WoS, growth is limited by the inherent dimensions of the total population of published articles, which obviously does not grow indefinitely. This means that any growth that is faster than the baseline rate can only take place at the expense of other producers. This leads to the conclusion that, above a certain point, it becomes increasingly difficult to scale positions in the ranking.

Despite this limitation, the trend for Nordic research seems to suggest that there is still room for growth, especially in the arts and humanities, where figures are still low. There is another natural possibility for growth, namely the inclusion in the WoS of

journals published in the Nordic countries. The case of the Danish journal Kosmorama, the only one published in one of the five countries analysed, supports this hypothesis. It accounts for nearly 40% of the total articles published in the AHCI by Nordic authors and 11% of the total Danish production. The inclusion of journals published in a specific country usually contributes positively to the results of the editing country: this is what happens with Slovenia and Javnost-The Public or with Spain, with three journals in the 'Communication' category of the SSCI and two additional journals in the 'Film, Radio, Television' category of the AHCI. The most evident case is that of Nordicom Review, with its strong base of Nordic authors.

A possible explanation for the growing relevance of Nordic media research may be found in reasons already given for similar cases in other contexts. For example, Önder et al. (2008) detected that the model of academic promotion, the increase in funding for research and an explicit internationalization aim understood in Western terms were responsible for the rising international profile of Turkish research. In the case of Spain, the increase in productivity has been explained by a growing network of contacts between Spanish scientists and their peers in the international scientific community, the availability of new human and economic resources and a new culture of assessment developed through specific scientific commissions (Jiménez Contreras et al. 2003).

These evaluation activities are encouraging internationalization of research, for example through journal lists like those used by the Danish Agency for Science, Technology and Innovation. Evaluation processes are well-known in the Nordic countries (Helander 1995) and in other countries like the UK, where the Research Assessment Exercise (Barker 2007) – now called the Research Excellence Framework – has received fierce critiques (Williams 1998). Despite opposing views, the fact is that research assessment has an impact on academic promotion and the possibility to obtain research funds. This is one explanation for the results found in the present study, but it clearly deserves closer scrutiny.

An interesting result is that of collaboration patterns. There seems to be no strong Nordic collaboration patterns. Nordic media scholars are more connected with American and British scholars than with other Nordic or even European colleagues. This finding is consistent with Horsti (2008) when referring to the subfield of immigration and ethnic relations. The Anglo-Saxon bias when collaborating with foreign scholars could be connected to a critical mass and the Anglo-Saxon bias of the WoS itself: most of the articles published in the international communication journals are authored by American and British scholars and thus they become the natural colleagues to publish with in these outlets. Obviously, these scholars have the advantage of language, as English is their first language and most of the international journals require its use. In fact, the vast majority of articles published by Nordic scholars in this period were written in English (96.8%). The few exceptions were 14 articles in Danish (Kosmorama), two in Spanish (Comunicar) and one in French (Positif).

The increasing volume of production at the institutional level does not always correlate with the most collaborative centres. This divergence allows discernment of the extent to which institutional or national cultures promote collaboration. For example, multiple authorship rates in Sweden are ten points above those of Denmark, Finland and Norway. But there are specific cases that illustrate this effect. For example, the University of Bergen, which is the sixteenth institution in terms of total production, is the

second most connected in the network of collaborations. Something similar can be said of another Norwegian institution, the Norwegian University of Science & Technology, which ranks fifteenth in total production but third in degree of collaboration.

All this output includes many topics published in a wide range of journals. The frequency of appearance of words in titles and keywords offers some clues to the main topics studied by Nordic scholars in the international arena. The appearance among the most used terms of words like mobile, virtual and interaction seems to suggest that Nordic scholars are entering the new subfields of research. This is confirmed when the list of the most frequent journals include New Media & Society at the top, as well as Research on Language and Social Interaction and International Journal of Mobile Communications. These new topics appear together with some of the most classical, such as journalism, news, advertising, television, power or democracy.

The present results are significant in several respects. First, they offer an overview of the internationalization of Nordic media research, which helps scholars to contextualize their research within the international community. Second, they establish collaboration patterns of this research, which raise new questions for scientific policies. For example, what kind of internationalization should be privileged, if any? Are European research programmes reflected in this output? What kind of objectives should national research plans and policies establish in terms of research outputs? Finally, a major issue arises concerning the scope of Nordic research. There seems to be no such scope at the international level despite the many tools shared by Nordic researchers. These are not the homogeneous reality usually seen from the outside, and there is a political option to fill this gap or to privilege other possible paths of internationalization like those of the European countries or the Anglo-Saxon axis.

To complement the results found here, further research should be conducted to investigate other equally important contributing factors, such as possible differences in internationally and nationally published research – as illustrated by the Catalan case (Masip and Fernández-Quijada (2011) – the own perceptions of Nordic researchers – through qualitative research – or an examination of areas in which a common Nordic approach would make sense.

Note

1. At the time of submitting this article, the author was Lecturer at the Department of Audiovisual Communication and Advertising of the Universitat Autònoma de Barcelona.
2. Data for this table were directly collected from the Web of Science, although some manual de-duplication work was done for institutions that appeared with different names (e.g., Aarhus University and University of Aarhus) or misspellings (e.g., Rosklide University).

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Appendix

Appendix I: Institution abbreviations

AAU = Abo Akad Univ (Finland)
AF = Acad Finland (Finland)
AOA = Actis Oslo Akershus (Norway)
ASB = Aarhus Sch Business (Denmark)
AUEB-GRE = Athens Univ Econ & Business (Greece)
AUH = Aarhus Univ Hosp (Denmark)
BCB-GER = Booz & Co Berlin (Germany)
BCM-GER = Booz & Co Munich (Germany)
BCS = Booz & Co Stockholm (Sweden)
BCV-AUT = Booz & Co Vienna (Austria)
BFS-SPA = Basque Fdn Sci (Spain)
BU = Bodo Univ (Norway)
BUC = Buskerud Univ Coll (Norway)
BU-CAN = Brock Univ (Canada)
BU-ITA = Bocconi Univ (Italy)
BU-TUR = Baskent Univ (Turkey)
BU-UK = Bournemouth Univ (UK)
BU-US = Bentley Univ (US)
CDUMP-ROM = Carol Davila Univ Med & Pharm (Romania)
CGU-US = Claremont Grad Univ (US)
CHMD = Cent Hosp Middle Finland (Finland)
CHS = Cent Hosp Savonlinna (Finland)
CSEBA = Copenhagen Sch Econ & Business Adm (Denmark)
CSU-US = Colorado State Univ (US)
CUBS-UK = City Univ Business Sch (UK)
CUNYHC-US = CUNY Hunter Coll (US)
CUT = Chalmers Univ Technol (Sweden)
CU-US = Columbia Univ (US)
DCU-IRE = Dublin City Univ (Ireland)
DUT-NET = Delft Univ Technol (Netherlands)
DU-US = Drury Univ (US)
ECU-AUS = Edith Cowan Univ (Australia)
ESADE-SPA = ESADE (Spain)
ETLA = ETLA (Finland)
FAMH = Finnish Assoc Mental Hlth (Finland)
GAPS = Geomat ApS (Denmark)
GC-US = Geneva Coll (US)
GE-FRA = GREYC ENSICAEN (France)
GSJC-US = Greenlee Sch Journalism & Commun (US)
GUL-UK = Goldsmiths Univ London (UK)
GVSU-US = Grand Valley State Univ (US)
HAS-HUN = Hungarian Acad Sci (Hungary)
HDKP = Hosp Dist Keski Pohjanmaa (Finland)
HIIT = Helsinki Inst Informat Technol (Finland)
HAS-FRA = Hop St Anne (France)
HSE = Helsinki Sch Econ (Finland)
HUJ-ISR = Hebrew Univ Jerusalem (Israel)
HUT = Helsinki Univ Technol (Finland)
IAI-ITA = Ist Auxol Italiano (Italy)
ICREA-SPA = ICREA (Spain)
II = Interact Inst (Sweden)
ISMR-FRA = Inst Sci Mat & Rayonnement (France)
ITUC = IT Univ Copenhagen (Denmark)
JIBS = Jönköping Int Business Sch (Sweden)
JU = Jönköping Univ (Sweden)
KI = Karolinska Inst (Sweden)
KTH = Royal Inst Technol KTH (Sweden)
KU = Karlstad Univ (Sweden)
KUH = Karolinska Univ Hosp (Sweden)
LiU = Linkoping Univ (Sweden)
LMU-UK = Leeds Metropolitan Univ (UK)
LSEPS-UK = London Sch Econ & Polit Sci (UK)
LTH = Lund Univ LTH (Sweden)
LU-NET = Leiden Univ (Netherlands)
LUT = Lulea Univ Technol (Sweden)
LUT-UK = Loughborough Univ Technol (UK)
LuU = Lund Univ (Sweden)
MAU-CAN = Mt Allison Univ (Canada)
MiaU-US = Miami Univ (US)
MIS = Medifacts Int Scandinavia (Denmark)
MnU = Malardalen Univ (Sweden)
MoU = Malmo Univ (Sweden)
MS = MEC Sponsorship (Denmark)
MSU = Mid Sweden Univ (Sweden)
MSU-US = Michigan State Univ (US)
MU-CAN = McGill Univ (Canada)
NCSU-US = N Carolina State Univ (US)
NCT = Norwegian Ctr Telemed (Norway)
NDSU-US = N Dakota State Univ (US)
NNRI = Norut No Res Inst (Norway)
NPHI = Natl Publ Hlth Inst (Finland)
NPUC = Norwegian Police Univ Coll (Norway)
NSEBA = Norwegian Sch Econ & Business Adm (Norway)
NSMBI = Norwegian Sch Management BI (Norway)
NSPH = Nord Sch Publ Hlth (Sweden)
NTNU = Norwegian Univ Sci & Technol (Norway)
OSM = Oslo Sch Management (Norway)
OSU-RUS = Omsk State Univ (Russia)
OUC = Oslo Univ Coll (Norway)
PERI = Pellervo Econ Res Inst (Finland)
PGSP-US = Pacific Grad Sch Psychol (US)
PN = Politiken Newspapers (Denmark)
PSU-THA = Prince Songkla Univ (Thailand)
PSU-US = Penn State Univ (US)
PU-GRE = Pante Univ (Greece)
PU-US = Purdue Univ (US)
RCEA-ITA = Rimini Ctr Econ Anal (Italy)
RCM = Royal Coll Mus (Sweden)
RDAFA = Royal Danish Acad Fine Arts (Denmark)
RU = Roskilde Univ (Denmark)
RU-CAN = Ryerson Univ (Canada)
RUN-NET = Radboud Univ Nijmegen (Netherlands)
SEI = Stockholm Environm Inst (Sweden)
SFU-CAN = Simon Fraser Univ (Canada)
SICT = SINTEF ICT (Norway)

SII = Social Insurance Inst (Finland)
SRC = Sleep Res Ctr (Finland)
STI-FRA = Stimulus (France)
ST-UK = Staffordshire Univ (UK)
StU-US = Stanford Univ (US)
SU = Sodertorn Univ (Sweden)
SUAS = Swedish Univ Agr Sci (Sweden)
SyU-US = Syracuse Univ (US)
TAMU-US = Texas A&M Univ (US)
TSEBA = Turku Sch Econ & Business Adm (Finland)
TTU-US = Texas Tech Univ (US)
TUAS = Turku Univ Appl Sci (Finland)
TUD = Tech Univ Denmark (Denmark)
UAg = Univ Aalborg (Denmark)
UA-NET = Univ Amsterdam (Netherlands)
UA-NZ = Univ Auckland (New Zealand)
UAs = Univ Aarhus (Denmark)
UB = Univ Bergen (Norway)
UB-GER = Univ Bielefeld (Germany)
UB-ITA = Univ Bologna (Italy)
UB-SPA = Univ Barcelona (Spain)
UB-SWI = Univ Bern (Switzerland)
UBC-SPA = Univ Basque Country (Spain)
UC = Univ Copenhagen (Denmark)
UC-CAN = Univ Calgary (Canada)
UCD-IRE = Univ Coll Dublin (Ireland)
UCG-BEL = Univ Coll Ghent (Belgium)
UCHZ-SWI = Univ Childrens Hosp Zurich (Switzerland)
UCL-UK = UCL (UK)
UCSB-US = Univ Calif Santa Barbara (US)
UCSC-ITA = Univ Cattolica Sacro Cuore (Italy)
UEd-UK = Univ Edinburgh (UK)
UEx-UK = Univ Exeter (UK)
UF-US = Univ Florida (US)
UGa = Univ Gavle (Sweden)
UG-GHA = Univ Ghana (Ghana)
UGo = Univ Gothenburg (Sweden)
UG-US = Univ Georgia (US)
UH = Univ Helsinki (Finland)
UI = Univ Iceland (Iceland)
UI-US = Univ Illinois (US)
UJ-GER = Univ Jena (Germany)
UJo = Univ Joensuu (Finland)
UJy = Univ Jyvaskyla (Finland)
UKC-UK = Univ Kent Canterbury (UK)
UL2-FRA = Univ Lyon 2 (France)
UL3-FRA = Univ Lille 3 (France)
ULe-UK = Univ Leeds (UK)
ULh-UK = Univ Loughborough (UK)
ULn-UK = Univ London (UK)
UMa-US = Univ Massachusetts (US)
UMi-US = Univ Missouri (US)
UM-SPA = Univ Murcia (Spain)
UmU = Umea Univ (Sweden)
UO-UK = Univ Oxford (UK)
UOr = Univ Örebro (Sweden)
UOs = Univ Oslo (Norway)
UOu = Univ Oulu (Finland)
UP7-FRA = Univ Paris 07 (France)
UPd-ITA = Univ Padua (Italy)
UpU = Uppsala Univ (Sweden)
UPv-ITA = Univ Pavia (Italy)
UQO-CAN = Univ Quebec Outaouais (Canada)
URL-SPA = Univ Ramon Llull (Spain)
US = Univ Stockholm (Sweden)
US-ITA = Univ Siena (Italy)
US-SPA = Univ Salamanca (Spain)
USe-UK = Univ Strathclyde (UK)
USg-UK = Univ Stirling (UK)
USn-UK = Univ Southampton (UK)
UST-RUS = Ural State Univ (Russia)
UTa = Univ Tampere (Finland)
UT-EST = Univ Tallinn (Estonia)
UTHSC-US = Univ Texas Hlth Sci Ctr (US)
UTr = Univ Tromso (Norway)
UTu = Univ Turku (Finland)
UT-US = Univ Texas (US)
UUH = Univ Uppsala Hosp (Sweden)
UU-US = Univ Utah (US)
UV = Univ Vaasa (Finland)
UWa-US = Univ Washington (US)
UWi-US = Univ Wisconsin (US)
VTT = VTT Tech Res Ctr (Finland)
VUA-NET = Vrije Univ Amsterdam (Netherlands)
WSSP-POL = Warsaw Sch Social Psychol (Poland)